P. 13

App. F. IX-4

Previous References. (1940-1 War) War File No. 133 q 40.
Serial Nos. 4 to 11

Later References.

GENERAL AND REVENUE SECRETARIAT.

Serial Nos. Five only

Part B for August 1942.

SUBJECT.

ARP in Collieries.

Krishnan
8.8.42

2624/W. A.R.P for Collieries.

General and Revenue Secretariat | W File No. 133 of 1940-1 | [App. F. III—2

Serial No.

From The Secy to the Hon'ble the Resident F.78(10)-40/W dated 26th Jun 42 forwarding a copy of the Revised Memorandum on A.R.P in Collieries prepared by the Govt of India. Kind reference is invited to the discussion in the file placed below. Orders for general instructions whether the Regns to be worked by Govt Inspectors of Mines for the working of the Mining authorities. 15 Pch.

JUL 1 1942 No (0:

CHIEF SECRETARIAT 27 JUN. 1942 GOVT. OF MYSORE

RS 27/6 SA

Law Secretary

(1) Three copies may be sent to the Chief Inspector of Mines & A.R.P controller, Bangalore

(2) Six spare copies may be asked from

Send. draft as desired to Regn & one draft to C.I. of Mines.

8 SA 8/7 Issued Pd 66 & 9 Jul 42 to the Regn

9 154/W & 10 Jul 42 to the C.I. of Mines

NOTE—Contn. Sheet.

WD 04155—GPB—55,000—23-10-41

480/W

ARP for Collieries.

File No. | of 194 | General and Revenue Secretariat

From The Secy to the Govt of Bombay Revenue Dept
F. 78(10)-Misc/W dated 5th Aug. 42
forwarding six copies of the revised memorandum "ARP for Collieries"
One copy has already been sent to the C.I of Mines. 5 copies will be sent to the I.S.P. for distribution to the Superintendents of Mines and for his report. Sent with a letter to the I.S.P.

Serial No. 10

1 copy for office

for Secy

RS 5/8/42

Issue 877/W dated 6th Aug. 42 to the I.S.P.

B

W 133-40-H

2624/W.

The reply to this communication should be addressed to the Secretary to the Resident in Mysore, Bangalore, by designation and not by name.

No. F.78(10)-40/W.

FROM

THE SECRETARY
TO THE HON'BLE THE RESIDENT IN MYSORE.

To

The Chief Secretary to the Government of
His Highness the Maharaja of Mysore,
Bangalore.

Dated Bangalore, the 26th June *1942.*

Air Raid Precautions for Collieries.

SIR,

I am directed to refer to my letter No.F.78(10)-40/W, dated the 11th December 1941, and to forward a copy of the revised memorandum on air raid precautions in collieries prepared by the Government of India.

I have the honour to be,
Sir,
Your most obedient servant,

for SECRETARY TO THE RESIDENT.

Appendix F G—1]

SUBJECT A.R.P. for collieries

Section War
File No. 133-40
Serial No. 8

Diary No. of letter replied to

No. Col 60

To

The Secretary to Government
War Department

General and Revenue Secretariat

( )

the *19* .

Sir,

Date of issue 9th July 1942

I am directed to acknowledge receipt of your letter No 7778(10)-40/W dt 26/6/42 forwarding a copy of the memorandum on A.R.P. in collieries prepared by the Board of Inquiry and to request you to be so good as to forward six more copies of the memorandum for distribution to the mining companies at Kolar.

I have the honour to be,
Sir,
Your obedient servant,

Signed by Mr. S. K. V.

List of enclosures

Copied by

Examined by

a d/ps

Appendix F G—1]

SUBJECT..... A. R. P for collieries

.....

.....

Section War

File No. ~~14~~ 133-40

Serial No. 9

Diary No. of letter replied to.....

No. 154/W.

To Encl

General and Revenue Secretariat

( )

the *19* .

The Chief Inspector of Mines & Engineers of A. R. P Collieries Coimbatore.

Date of issue 10.7.42

Sir,

Signed by Mr. S. K. V.

I am directed to forward herewith a copy of the revised memorandum of A. R. P in collieries for information for reference.

I am to enclose

for Chief Secy

List of enclosures.....

Copied by .....

Examined by .....

W 133-40-10.

The reply to this communication should be addressed to the Secretary to the Resident in Mysore, Bangalore, by designation and not by name.

No. F.78(10)-40/W (Pol Sec).

480/W

FROM

THE SECRETARY
TO THE HON'BLE THE RESIDENT IN MYSORE.

To

The Chief Secretary to the Government of
His Highness the Maharaja of Mysore,
BANGALORE.

5/8/42

Dated Bangalore, the 5th August *1942.*

A. R. P. FOR COLLIERIES.

SIR,

I am directed to refer to your letter No. Pol.60/W, dated the 9th July 1942, and to forward six copies of the revised memorandum "Air Raid Precautions for Collieries" for distribution to the Mining Companies at Kolar Gold Fields.

I have the honour to be,

Sir,

Your most obedient servant,

for SECRETARY TO THE RESIDENT.

ksv.

No. 877/W-/Gen 5

5th/6 August 1942.

The Inspector-General of Police in Mysore.

A.R.P. for Collieries.

I am directed to refer to the correspondence ending with this office letter No.1091/W dated the 12th December 1941 on the above subject, and to forward five copies of the revised memorandum "A.R.P. for Collieries" since received from the Residency, for distribution to the four Mining Companies at K.G.F. and for your reference.

I am to add that a copy of the memorandum has already been sent to the Chief Inspector of Mines and A.R.P. Controller, K.G.F.

I have the honour to be,

Sir,

Your most obedient servant,

For Chief Secretary to Government.

AIR RAID PRECAUTIONS FOR COLLIERIES

Issued by the Government of India

DEPARTMENT OF LABOUR

AIR RAID PRECAUTIONS FOR COLLIERIES.

Protection of Workers and Plant and Obscuration of Light

Protection of Workers and Plant.

It is not practicable to distinguish between measures designed for the protection of workers and those designed to protect plant, since the two aspects are not separable one from the other.

Protection of Workers below Ground.—Workers in the pits will be safe from the direct effects of high explosive and other bombs bursting on the ground. They will, however, be exposed to risks consequent on the explosion of such bombs near the shafts or down the shafts. Though these risks may appear to be remote the effects might be extremely serious and steps should be taken to minimise them so far as can be done.

As only a short warning of an air raid is to be expected, it would not be practicable, even if it were desirable, to bring underground workers to the surface.

On receipt of an air raid warning, all workers at the bottom of shafts, at all intermediate insets (if any) and all workers in the vicinity of shafts or insets should retreat to a safe place not less than 300 feet from any shaft or inset, and steps should be taken to direct any other underground workers who may approach a shaft or inset to such safe places.

Protection of Surface Workers.—Numbers.—In addition to regular surface workers consideration should be given to the situation likely to arise, if an air raid warning is received when large numbers of underground workers are collected at the top of the shaft. No further movement of the cages should be permitted, after the cages have completed the journey up or down on which they are engaged when the warning is received, because of the action required at the top and bottom of the shaft.

It would be necessary to have plans for the protection at the surface of the largest number of workers likely to be collected there at any time in the 24 hours, and it would be of considerable assistance if the working shifts could be arranged to avoid large congregations of workers at one time on the surface.

Dispersal.—It is important to avoid, as far as possible, any large congregation of persons. In selecting places for shelters, not more than 50 workers should be congregated in any one place, unless special arrangements for dividing shelters are made, or the shelter provides a high degree of protection against a direct hit.

The protection provided should include protection against blast and splinters and falling debris.

Choice of Shelter.—Collective protection may be provided in any of the following ways:—

(1) by the use as shelters of suitable accommodation in existing buildings;
(2) by trenches or other outside shelters;
(3) by a combination of the above;
(4) by inclines or adits.

The first point to consider is what facilities for collective protection may exist in the place of work, and which of the methods suggested above would be most suitable.

In some cases it may be found that the facilities available on or near the premises are not adequate to provide for the whole of the workers. In this event it may be advisable to arrange that, on receipt of an air raid warning, a specified number of the workers should be dispersed to other parts of the area where suitable accommodation exists. In coming to a decision on this matter it is very important to remember that the length of warning received will probably be of short duration and that it is undesirable that persons should be caught in the open when the raid begins. Further, in the arrangements made the importance of getting people back to work after a raid should not be overlooked.

It is necessary to consider in advance the methods by which workers are to be directed to their shelters—for example, by the use of sign boards, which might be in distinctive colours.

In deciding whether protection should be provided indoors or not, account should be taken of the construction of the building. If it is of very light construction and therefore liable to heavy damage it may be preferable to arrange for shelter out-of-doors. A building which has a great deal of glass in windows or skylights might also be dangerous unless steps are taken to guard against the danger of large quantities of glass falling upon persons in the building.

Indoor Shelters.—It is better to have a number of small shelters than to attempt to congregate a large number of workers in one shelter, and, as indicated above, fifty persons per shelter, or per compartment of a shelter, should be regarded as the maximum number in normal circumstances, though it is realised that it may at times be necessary to exceed this number. In determining the number of persons to be accommodated in an unventilated shelter for short periods of time, 6 square feet of floor area and 7 feet 6 inches of head room should be allowed per person. The walls of the shelter should be capable of withstanding the effect of blast and of preventing the penetration of splinters. It is also of the utmost importance that the roof of the shelter should be capable of withstanding the fall of the debris from the superstructure in the event of demolition thereof by explosion.

It is essential that every shelter should have at least two exits which should be separated as far as possible.

No shelter should be located immediately below heavy machinery, water tanks, or other heavy plant.

No shelter should be near stores of inflammable material, gas mains or by-product plants.

The fewer the openings, such as windows and doors, the better, and the easier it will be to afford protection against splinters.

If the shelter has windows it is preferable that they should face another building or a wall, or else soft ground, since there will then be less danger from flying splinters and blast.

There is also advantage in having shelters facing away from the prevailing wind, which may tend to blow gas through cracks which have not been properly sealed.

Key personnel who have to remain at specific posts during air raids should be provided with blast and splinter-proof protection at their duty posts. The best place to select inside a building is a corner of the room so as to derive the benefit of the extra protection from the adjoining walls. In this position a shelter should be erected, and the walls, if necessary, reinforced by sandbags. Overhead protection against falling debris should be given.

Shelters in open ground.—If for any reason indoor shelters are impracticable, it may be necessary to arrange for the construction of shelters in open ground. A Drawing of a typical air raid shelter which the Government of India are advised is suitable for the conditions expected to be met with in the coalfields is appended to this memorandum. The more important points calling for attention are:—

' (i) accessibility both from the point of view of location of the shelters in relation to people using them and ease of entrance to the shelter itself;

(ii) provision of ample space for the number of people to be accommodated;

(iii) ample air space per head of the occupants in the case of covered trenches.

Where *inclines or adits* exist, arrangements should be made for all persons within easy reach to be accommodated.

Mine Shafts.

Where there are only two shafts and they are less than 100 feet apart, there is a possibility that both may be damaged by a high explosive bomb. If there are no other available means of escape, the necessary equipment and material for opening up one of the shafts should be collected and stored at some distance from the shaft mouths.

The use of inflammable materials in structures in the vicinity of shafts should, so far as possible, be eliminated so as to reduce the danger from incendiary bombs. Coal stocks may also be set on fire by incendiary bombs and as smoke and fumes carried into the mine by the ventilating air-current would be dangerous to persons present under ground, such stocks of coal should, wherever practicable, be kept not less than 50 ft. away from the perimeter of shafts.

Headgear and Winding Gear.

Headgear frames of steel or reinforced concrete are unlikely to collapse as a result of a bomb explosion, but the winding wheels, cables, cages and other equipment might be wrecked, and the headgear generally so damaged as to be put out of action.

Plant should be available, preferably near the colliery or at some centre serving a number of collieries, to bring the men up, in the event of the winding gear or power plant being put out of action.

As tractors are not available in this country, it will be necessary to have a haulage gear and a small vertical boiler (for raising steam quickly) which can be readily transported by lorries. Most of the shafts or pits in this country are comparatively shallow and, therefore a large plant would not be required for most of the mines.

So far as is possible, provision should be made to have alternative winding gear available.

Boilers and Power Plant.

In existing buildings containing machinery and plant the windows should be protected by splinter-proof materials up to at least the level of the top of the machinery and arrangements should be made, if the windows are not completely covered, to reinforce the glass so that fragments will not be projected by blast on to the plant.

When future construction or reconstruction takes place roofs should consist of at least 5 inches of reinforced concrete to keep out light incendiary bombs and walls should be of the thicknesses necessary to keep out splinters from high explosive bombs. The windows, if any, should be as few and as small as possible and should be high up with their sills above the level of the top of the plant. Glass lights in the roof should be avoided.

Where possible, standby plant should be available for use in the event of the permanent plant being destroyed. This is particularly necessary in the case of machinery on which the safety of the workers and the continued operation of the pit depend. Standby plant should not be located in the same building as, or close to, the permanent plant, so as to avoid the risk of both plants being destroyed by the same bomb.

The vital parts of plant should be protected from damage by splinters from high explosive bombs and where the plant is in the open without any protection, sandbag walls or other forms of improvised protection should be provided.

Where power is obtained solely from the public supply, two connections should be provided, well separated from each other so as to avoid the danger of the connection with the public supply being destroyed by one bomb. Transformers should be protected as fully as possible, though splinter-proof barriers should be so constructed as to permit the free circulation of air round the transformer.

In the event of an air raid warning boiler fires in vertical boilers should be drawn and quenched. In the case of Lancashire boilers suitable 'housing' or covering should be erected over the front of the boilers to obscure all light.

OBSCURATION OF LIGHT AT SOFT COKE HEAPS, BEE-HIVE COKE OVENS AND COUNTRY COKE OVENS.

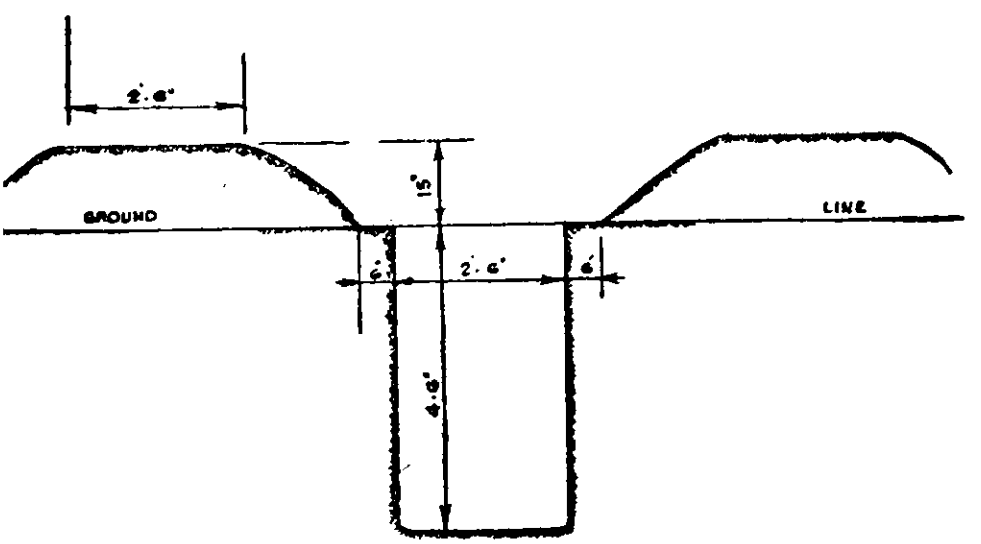
Soft Coke Heaps.—Between the hours of sunset and sunrise soft coke heaps should be well covered with quenched ashes (the residue of soft coke burning) so that all flame is completely obscured. This covering of ash has no deleterious effects on the coke.

Bee-hive ovens.—Light from Bee-hive ovens can be effectively obscured by erecting over the chimneys of the ovens a light sheet iron structure supported on a frame of angle and T iron. Above each chimney there is an opening 15″ × 12″ to allow the gases to escape, but between the hours of sunset and sunrise each opening is closed by a sliding shutter when all flame from the chimneys will be completely obscured.

A detailed drawing of the arrangement will be supplied by the Chief Inspector of Mines to all users of such ovens. It should be noted that if the dampers of the ovens are closed, the ovens may be heated up to such an extent as to result in the oven doors being blown off.

Country coke ovens.—As this is an open type of oven, flame can be obscured on much the same lines as in the case of soft coke heaps.

Between the hours of sunset and sunrise, the top of the oven should be well covered with quenched ashes (the residue of ordinary coke) and all flues tightly sealed with brick and mud. The "blanketing" of an oven and the sealing of the flues occupies about 4-man-hours, *i.e.*, 12 men can complete the work in 20 minutes. The oven can be kept smothered for 2 or 3 days in this way and the coke will not be affected.



GIPD.–L41 D of L—1-6-42—750